

BIOGRAPHICAL SKETCH

of

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ADDRESS

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EDUCATION

Reed College, Portland, OR, B.A., 1963 (Chemistry)
Oregon State University, Corvallis, OR, Ph.D, 1967 (Physical Chemistry)
Case Western Reserve University, Cleveland, OH, Research Associate 1967-71
(Polymer Science)

EXPERIENCE

1971-74 Senior Research Associate, Department of Macromolecular Science, Case
1974-79 Assistant Professor, Department of Macromolecular Science, Case
1979-83 Associate Professor, Department of Macromolecular Science, Case
1981-present Director, Center for Applied Polymer Research (CAPRI), Case
1983-present Professor, Department of Macromolecular Science, Case
2004-present Herbert Henry Dow Professor of Science and Engineering, Case
1984-present Adjunct Professor, Polymer Engineering, University of Akron, Akron, OH
1988 Visiting Lecturer, Department of Materials, Technion, Haifa, Israel
1984-1989 NIH Surgery and Bioengineering Study Section.
1991-1995 NIH Surgery and Bioengineering Study Section.
1981-present Editorial Board, Journal of Biomedical Materials Research
1989-2000 Editorial Board, Journal of Applied Polymer Science
1991-2000 Editorial Board, EPIC Press.
2001-present Co-Editor, Journal of Applied Polymer Science
2002-present Editorial Board, Polymer Engineering and Science

HONORS and AWARDS

Fellow, American Institute for Medical and Biological Engineering
Fellow, ACS Division of Polymeric Materials: Science and Engineering
1989-90 Arthur Scott Lecturer, Reed College, Portland, Oregon
1998 Best Paper Award, Polyolefins, SPE
1999 Roon Award, Federation of Societies for Coatings Technology
2001 Cooperative Research Award in Polymer Science and Engineering, ACS-PMSE
2004 Outstanding Achievement Award, SPE-TPMF
2005 Mather Spotlight on Scholarship, Case

RESEARCH INTERESTS

Structure-property-processing relationships of polymers, blends and composites;
Irreversible deformation, crack propagation and fracture; Microlayer polymer processing;
Gas transport in polymers; Biostability of biomaterials.

BOOKS EDITED

Structure Property Relationships of Polymeric Solids, Plenum Press, 1983.

PUBLICATIONS (submitted)

- 347 Oxygen Transport Properties of Liquid Crystalline Polyesters Based on 4,4'-Bibenzoic Acid, with Y. S. Hu, H. P. Wang, D. A. Schiraldi, and E. Baer, *J. Appl. Polym. Sci.* (submitted).
- 346 An Isotactic Poly(1-butene) Structure for Copolymers of Propene and Hexene, with B. Lotz, J. Ruan, A. Thierry, G. C. Alfonso, E. Baer, E. Piorkowska, and A. Galeski, *Macromolecules* (submitted).

PUBLICATIONS (in press)

- 345 Formation and Transformation of Polypropylene Nanodroplets, with Y. Jin, E. Baer, R. Masirek, E. Piorkowska, and A. Galeski, *J. Polym. Sci. Part B: Polym. Phys.* (in press)
- 344 Oxygen Transport Properties of Liquid Crystalline Poly(pentamethylene 4,4'-bibenzoate), with Y. S. Hu and E. Baer, *Polymer* (in press).
- 343 Morphology Studies of Multilayered HDPE/PS Systems, with T. E. Bernal-Lara, R. Masirek, E. Baer, E. Piorkowska, and A. Galeski, *J. Appl. Polym. Sci.* (in press).

PUBLICATIONS

- 342 Enzymatic Degradation of Poly(Ether Urethane) and Poly(Carbonate Urethane) by Cholesterol Esterase, with E. M. Christenson, S. Patel, and J. M. Anderson, *Biomaterials*, 27, 3920-3926 (2006).
- 341 Antioxidant Inhibition of Poly(Carbonate Urethane) *In Vivo* Biodegradation, with E. M. Christenson and J. M. Anderson, *J. Biomed. Mater. Res.*, 76A, 480-490 (2006).
- 340 Comparison of Propylene/Ethylene Copolymers Prepared with Different Catalysts, with C. H. Stephens, B. C. Poon, P. Ansems, S. P. Chum, A. Hiltner, and E. Baer, *J. Appl. Polym. Sci.*, 100, 1651-1658 (2006).
- 339 Solid State Structure and Oxygen Transport Properties of Copolyesters Based on Smectic Poly(hexamethylene 4,4'-bibenzoate), with Y. S. Hu and E. Baer, *Polymer*, 47, 2423-2433 (2006).
- 338 Miscibility of Propylene/Ethylene Copolymer Blends, with A. R. Kamdar, Y. S. Hu, P. Ansems, S. P. Chum, and E. Baer, *Macromolecules*, 39, 1496-1506 (2006).
- 337 The Amorphous Phase of Propylene/Ethylene Copolymers Characterized by Positron Annihilation Lifetime Spectroscopy, with H. P. Wang, P. Ansems, S. P. Chum, and E. Baer, *Macromolecules*, 39, 1488-1495 (2006).
- 336 Improving Transparency of Stretched PET/Polyamide Blends, with V. Prattipati, Y. S. Hu, S. Bandi, S. Mehta, D. A. Schiraldi, and E. Baer, *J. Appl. Polym. Sci.*, 99, 225-235 (2006).

- 335 **Forced Assembly of Polymer Nanolayers Thinner than the Interphase**, with R. Y. F. Liu, A. P. Ranade, H. P. Wang, T. E. Bernal-Lara, and E. Baer, *Macromolecules*, **38**, 10721-10727 (2005).
- 334 **Relationship between Nanoscale Deformation Processes and Elastic Behavior of Polyurethane Elastomers**, with E. M. Christenson, J. M. Anderson, and E. Baer, *Polymer*, **46**, 11744-11754 (2005).
- 333 **Improving Oxygen Barrier Properties of PET by Incorporating Isophthalate: II. Effect of Crystallization**, with Y. S. Hu and E. Baer, *J. Appl. Polym. Sci.*, **98**, 1629-1642 (2005).
- 332 **Conductivity of Polyolefins Filled with High-Structure Carbon Black**, with J. Yu, L. Q. Zhang, M. Rogunova, J. Summers, and E. Baer, *J. Appl. Polym. Sci.*, **98**, 1799-1805 (2005).
- 331 **Biostability and Macrophage-Mediated Foreign Body Reactions of Silicone-Modified Polyurethanes**, with E. M. Christenson, M. Dadsetan, and J. M. Anderson, *J. Biomed. Mater. Res.*, **74A**, 141-155 (2005).
- 330 **Nanostructure Development in Multilayered Polymer Systems as Revealed by X-ray Scattering Methods**, with F. J. Baltá Calleja, F. Ania, I. P. Orench, E. Baer, T. Bernal, and S. S. Funari, *Prog. Colloid Polym. Sci.*, **130**, 140-148 (2005).
- 329 **Improving Oxygen Barrier Properties of PET by Incorporating Isophthalate: I. Effect of Orientation**, with R. Y. F. Liu, Y. S. Hu, M. R. Hibbs, D. M. Collard, D. A. Schiraldi, and E. Baer, *J. Appl. Polym. Sci.*, **98**, 1615-1628 (2005).
- 328 **Nano and Microlayered Polymers: Structure and Properties**, with T. E. Bernal-Lara, A. Ranade, and E. Baer, in *Mechanical Properties of Polymers Based on Nanostructure and Morphology* (G. H. Michler and F. J. Baltá Calleja, eds.), Taylor & Francis, 2005, pp.629-681.
- 327 **Improving Transparency of Stretched PET/MXD6 Blends by Modifying PET with Isophthalate**, with Y. S. Hu, V. Prattipati, E. Baer, and S. Mehta, *Polymer*, **46**, 5202-5210 (2005).
- 326 **Surface Modification of Poly(ether urethane urea) with Modified Dehydroepiandrosterone for Improved *In Vivo* Biostability**, with E. M. Christenson, M. J. Wiggins, and J. M. Anderson, *J. Biomed. Mater. Res.*, **73A**, 108-115 (2005).
- 325 **Polymer Interphase Materials by Forced Assembly**, with R. Y. F. Liu, T. E. Bernal-Lara, and E. Baer, *Macromolecules*, **38**, 4819-4827 (2005).
- 324 **Effect of Compatibilization on Oxygen-Barrier Properties of PET/MXD6 Blends**, with V. Prattipati, Y. S. Hu, S. Bandi, D. A. Schiraldi, E. Baer, and S. Mehta *J. Appl. Polym. Sci.*, **97**, 1361-1370 (2005).
- 323 **Effect of Water Sorption on Oxygen Barrier Properties of Aromatic Polyamides**, with Y. S. Hu, S. Mehta, D. A. Schiraldi, and E. Baer, *J. Polym. Sci. Part B: Polym. Phys.*, **43**, 1365-1381 (2005).
- 322 **Structure and Thermal Stability of Polyethylene Nanolayers**, with T. E. Bernal-Lara, R. Y. F. Liu, and E. Baer, *Polymer*, **46**, 3043-3055 (2005).

- 321 Effect of Orientation on the Free Volume and Oxygen Transport of a Polypropylene Copolymer, with L. S. Somlai, R. Y. F. Liu, L. M. Landoll, and E. Baer, *J. Polym. Sci. Part B: Polym. Phys.*, **43**, 1230-1243 (2005).
- 320 Improving Gas Barrier of PET by Blending with Aromatic Polyamides, with Y. S. Hu, V. Prattipati, S. Mehta, D. A. Schiraldi, and E. Baer, *Polymer*, **46**, 2685-2698 (2005).
- 319 Oxygen Transport as a Solid State Structure Probe for Polymeric Materials: A Review, with R. F. Y. Liu, Y. S. Hu, and E. Baer, *J. Polym. Sci. Part B: Polym. Phys.*, **43**, 1047-1063 (2005).
- 318 Structure and Properties of Homogeneous Copolymers of Propylene and 1-Hexene, with B. Poon, M. Rogunova, S. P. Chum, E. Baer, A. Galeski, and E. Piorkowska, *Macromolecules*, **38**, 1232-1243 (2005).
- 317 A Widely Tunable Refractive Index in Nanolayered Polymers, by M. Sandrock, A. S. Shirk, H. Tai, A. Ranada, M. Wiggins, E. Baer, and A. Hiltner, *Appl. Phys. Lett.*, **84**, 3621-3623 (2004).
- 316 Surface Chemistry Mediates Adhesive Structure, Cytoskeletal Organization, and Fusion of Macrophages, with M. Dadsetan, J. A. Jones, and J. M. Anderson, *J. Biomed. Mater. Res.*, **71A**, 439-448 (2004).
- 315 Micromechanical Processes in PET/PC Multilayered Tapes: High Voltage Electron Microscopy Investigations, with E. M. Ivan'kova, G. H. Michler, and E. Baer, *Macromol. Mater. Eng.*, **289**, 787-792 (2004).
- 314 Structure-Property Relationships in Coextruded Foam/Film Microlayers, with A. P. Ranade, E. Baer, and D. G. Bland, *J. Cell. Plast.*, **40**, 497-507 (2004).
- 313 Classification of Homogeneous Copolymers of Propylene and 1-Octene Based on Comonomer Content, with B. Poon, M. Rogunova, S. P. Chum, and E. Baer, *J. Polym. Sci. Part B: Polym. Phys.*, **42**, 4357-4370 (2004).
- 312 Buckling in Elastomer/Plastic/Elastomer 3-Layer Films, with Y. Hu and E. Baer, *Polymer Composites*, **25**, 653-661 (2004).
- 311 Interphase Materials by Forced-Assembly of Glassy Polymers, with R. Y. F. Liu, T. E. Bernal-Lara, and E. Baer, *Macromolecules*, **37**, 6972-6979 (2004).
- 310 Structure of Polypropylene Crystallized in Confined Nanolayers, with Y. Jin, M. Rogunova, E. Baer, R. Nowacki, A. Galeski, and E. Piorkowska, *J. Polym. Sci. B: Polym. Phys.*, **42**, 3380-3396 (2004).
- 309 Macrophage Behavior on Surface Modified Polyurethanes, with J. A. Jones, M. Dadsetan, T. O. Collier, M. Ebert, K. S. Stokes, R. S. Ward, and J. M. Anderson, *J. Biomater. Sci. Polym. Edn.*, **15**, 567-584 (2004).
- 308 Crystallinity and Oxygen Transport Properties of PET Bottle Walls, with R. Y. F. Liu, Y. S. Hu, D. A. Schiraldi, and E. Baer, *J. Appl. Polym. Sci.*, **94**, 671-677(2004).
- 307 Design and Application of Photopatternable Nanomaterials, with R. Tangirala, E. Baer, and C. Weder, *Adv. Funct. Mater.*, **14**, 595-604 (2004).

- 306 Oxidative Mechanisms of Poly(carbonate urethane) and Poly(ether urethane) Biodegradation: *In Vivo* and *In Vitro* Correlations, with E. M. Christenson and J. M. Anderson, *J. Biomed. Mater. Res.*, 70A, 245-255 (2004).
- 305 Basic Aspects of Microindentation in Multilayered Poly(ethylene terephthalate)/Polycarbonate Films, with I. P. Orench, F. Ania, E. Baer, T. Bernal, and F. J. Baltá Calleja, *Phil. Mag.*, 84, 1841-1852 (2004).
- 304 Quasi-brittle to Ductile Transition in Impact Modified PVC, with J. Yu, J. W. Summers, and E. Baer, *J. Vinyl Addit. Technol.*, 10, 11-16 (2004).
- 303 Stepwise Fatigue Crack Propagation in Poly(vinyl chloride), with T. E. Bernal-Lara, Y. Hu, J. W. Summers, and E. Baer, *J. Vinyl Addit. Technol.*, 10, 5-10 (2004).
- 302 Poly(carbonate urethane) and Poly(ether urethane) Biodegradation: *In Vivo* Studies, with E. M. Christenson, M. Dadsetan, M. J. Wiggins, J. M. Anderson, *J. Biomed. Mater. Res.*, 69A, 407-416 (2004).
- 301 Effect of Impact Modification on Slow Crack Growth in Poly(Vinyl Chloride), with T. E. Bernal-Lara, Y. Hu, J. Summers, and E. Baer, *J. Mater. Sci.*, 39, 2979-2988 (2004).
- 300 *In Vivo* Inflammatory and Wound Healing Effects of Gold Electrode Voltammetry for MEMS Micro-Reservoir Drug Delivery Device, with G. Voskerician, R. S. Shawgo, J. M. Anderson, M. J. Cima, and R. Langer, *IEEE Trans. Biomed. Eng.*, 51, 627-635 (2004).
- 299 Poly(ethylene terephthalate) Modified with Aromatic Bisester Diamides: Thermal and Oxygen Barrier Properties, with M. R. Hibbs, J. Holtzclaw, D. M. Collard, R. Y. F. Liu, E. Baer, and D. A. Schiraldi, *J. Polym. Sci. A: Polym. Chem.*, 42, 1668-1681 (2004).
- 298 Oxygen Barrier Properties of Copolyesters Containing a Mesogenic Group, with Y. Hu, R. Y. F. Liu, D. A. Schiraldi, and E. Baer, *Macromolecules*, 37, 2136-2143 (2004).
- 297 Solid State Structure of Copolyesters Containing a Mesogenic Group, with Y. Hu, R. Y. F. Liu, D. A. Schiraldi, and E. Baer, *Macromolecules*, 37, 2128-2135 (2004).
- 296 Polymers with Palladium Nano-Particles as Active Membrane Materials, with J. Yu, R. Y. F. Liu, B. Poon, S. Nazarenko, T. Koloski, T. Vargo, and E. Baer, *J. Appl. Polym. Sci.*, 92, 749-756 (2004).
- 295 Effect of Soft Segment Chemistry on Polyurethane Biostability During *In Vitro* Fatigue Loading, with M. J. Wiggins, M. MacEwan, and J. M. Anderson, *J. Biomed. Mater. Res.*, 68A, 668-683 (2004).
- 294 Modifying Adhesion of Linear Low Density Polyethylene to Polypropylene by Blending with a Homogeneous Ethylene Copolymer, with B. C. Poon, S. P. Chum, and E. Baer, *J. Appl. Polym. Sci.*, 92, 109-115 (2004).
- 293 Adhesion of Polyethylene Blends to Polypropylene, with B. C. Poon, S. P. Chum, and E. Baer, *Polymer*, 45, 893-903 (2004).
- 292 Free Volume and Oxygen Transport in Cold-Drawn Polyesters, with R. Y. F. Liu and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, 42, 493-504 (2004).

- 291 Probing Nanoscale Polymer Interactions by Forced-Assembly, with R. Y. F. Liu, Y. Jin, and E. Baer, *Macro. Rapid Comm.*, **24**, 943-948 (2003).
- 290 *In Vivo* Biocompatibility and Biodegradation of Poly(ethylene carbonate), with M. Dadsetan, E. M. Christenson, F. Unger, M. Ausborn, T. Kissel, and J. M. Anderson, *J. Control. Release*, **93**, 259-270 (2003).
- 289 Effect of Strain and Strain Rate on Fatigue-Accelerated Biodegradation of Polyurethane, with M. J. Wiggins and J. M. Anderson, *J. Biomed. Mater. Res.*, **66A**, 463-475 (2003).
- 288 Aging of Poly(lactide)/Poly(ethylene glycol) Blends: 1. Poly(lactide) with Low Stereoregularity, with Y. Hu, M. Rogunova, V. Topolkaraev, and E. Baer, *Polymer*, **44**, 5701-5710, (2003).
- 287 Aging of Poly(lactide)/Poly(ethylene glycol) Blends: 2. Poly(lactide) with High Stereoregularity, with Y. Hu, Y. S. Hu, V. Topolkaraev, and E. Baer, *Polymer*, **44**, 5711-5720 (2003).
- 286 Crystallization and Phase Separation in Blends of High Stereoregular Poly(lactide) with Poly(ethylene glycol), with Y. Hu, Y. S. Hu, V. Topolkaraev, and E. Baer, *Polymer*, **44**, 5681-5689 (2003).
- 285 Characterization of Polyethylene with Partially Random Chlorine Substitution, with C. H. Stephens, H. Yang, M. Islam, S. P. Chum, S. J. Rowan, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **41**, 2062-2070 (2003).
- 284 Biodegradation of Polyurethane under Fatigue Loading, with M. J. Wiggins and J. M. Anderson, *J. Biomed. Mater. Res.*, **65A**, 524-535 (2003).
- 283 Adhesion of Ethylene-Styrene Copolymers to Polyethylene in Microlayers, with V. Ronesi, Y. W. Cheung, and E. Baer, *J. Appl. Polym. Sci.*, **89**, 153-162 (2003).
- 282 Oxygen Barrier Properties of PET Copolymers Containing Bis(2-hydroxyethyl)hydroquinone, with G. S. Andrade, D. M. Collard, D. A. Schiraldi, Y. S. Hu, and E. Baer, *J. Appl. Polym. Sci.*, **89**, 934-942 (2003).
- 281 Structural Model for Oxygen Permeability of a Liquid Crystalline Polymer, with Y. S. Hu, D. A. Schiraldi, and E. Baer, *Macromolecules*, **36**, 3606-3615 (2003).
- 280 Phase Behavior of Partially Miscible Blends of Linear and Branched Polyethylenes, with C. H. Stephens and E. Baer, *Macromolecules*, **36**, 2733-2741 (2003).
- 279 Correlation of Fatigue and Creep Crack Growth in Poly(vinyl chloride), with H. Yu, J. Summers, and E. Baer, *J. Mater. Sci.*, **38**, 633-642 (2003).
- 278 Comparison of Statistical and Blocky Copolymers of Ethylene Terephthalate and Ethylene 4,4'-Bibenzoate Based on Thermal Behavior and Oxygen Transport Properties, with R. Y. F. Liu, Y. S. Hu, M. R. Hibbs, D. M. Collard, D. A. Schiraldi, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **41**, 289-307 (2003).
- 277 Covalent and Non-Covalently Coupled Polyester-Inorganic Composite Materials, with S. K. Young, G. C. Gemeinhardt, J. W. Sherman, R. F. Storey, K. A. Mauritz, D. A. Schiraldi, A. Polyakova, and E. Baer, *Polymer*, **43**, 6101-6114 (2002).

- 276 Kinetics of Fatigue and Creep Crack Propagation in PVC Pipe, with Y. Hu, J. Summers, and E. Baer, *J. Vinyl & Additive Tech.*, **8**, 251-258 (2002).
- 275 Tear Strength of Ductile Polyolefin Films, with A. C. Chang, T. Inge, L. Tau, and E. Baer, *Polym. Eng. Sci.*, **42**, 2202-2212 (2002).
- 274 Characterization of an Amorphous Surface Layer on Blown Polyolefin Film, with A. C. Chang, S. P. Chum, and E. Baer, *J. Appl. Polym. Sci.*, **86**, 3625-3635 (2002).
- 273 Mechanisms of Ductile Tear in Blown Film from Blends of Polyethylene and High Melt Strength Polypropylene, with A. C. Chang, S. P. Chum, and E. Baer, *Polymer*, **43**, 6515-6526 (2002).
- 272 Oxygen Barrier Properties of Cold-Crystallized and Melt-Crystallized Poly(ethylene terephthalate-co-benzoate), with Y. S. Hu, R. Y. F. Liu, M. Roganova, D. A. Schiraldi, S. Nazarenko, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **40**, 2489-2503 (2002).
- 271 Structure of Blown Film from Blends of Polyethylene and High Melt Strength Polypropylene, with A. C. Chang, L. Tau, and E. Baer, *Polymer*, **43**, 4923-4933 (2002).
- 270 Oxygen Transport and Free Volume in Cold-Crystallized and Melt-Crystallized Poly(ethylene naphthalate), with Y. S. Hu, R. Y. F. Liu, L. Q. Zhang, M. Roganova, D. A. Schiraldi, S. Nazarenko, and E. Baer, *Macromolecules*, **35**, 7326-7337 (2002).
- 269 Plastic Deformation of EVA, EVOH and Their Multilayers, with V. Gaucher-Miri, G. K. Jones, R. Kaas, and E. Baer, *J. Mater. Sci.*, **37**, 2635-2644 (2002).
- 268 Crystallization Kinetics and Crystalline Morphology of Poly(ethylene naphthalate) and Poly(ethylene terephthalate-co-benzoate), with Y. S. Hu, M. Roganova, D. A. Schiraldi, and E. Baer, *J. Appl. Polym. Sci.*, **86**, 98-115 (2002).
- 267 Barrier Properties of Polypropylene/Polyamide Blends Produced by Microlayer Coextrusion, with D. Jarus and E. Baer, *Polymer*, **43**, 2401-2408 (2002).
- 266 Oxygen Barrier Properties of Cold-Drawn Polyesters, with R. Y. F. Liu, D. A. Schiraldi, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **40**, 862-877 (2002).
- 265 Relationship of Deformation Behavior to Thermal Transitions of Low Crystallinity Ethylene Copolymers, with A. Chang, Y. W. Cheung, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **40**, 142-152 (2002).
- 264 The Damage Zone Ahead of the Arrested Crack in Polyethylene Resins, with M. Parsons, E. V. Stepanov, and E. Baer, *J. Mater. Sci.*, **36**, 5747-5755 (2001).
- 263 Microlayer Coextrusion as a Route to Innovative Blend Structures, with D. Jarus and E. Baer, *Polym. Eng. Sci.*, **41**, 2162-2171 (2001).
- 262 Effect of Crystallization on Oxygen Barrier Properties of Copolyesters Based on Ethylene Terephthalate, with A. Polyakova, E. V. Stepanov, D. Sekelik, D. A. Schiraldi, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **39**, 1911-1919 (2001).
- 261 Oxygen Barrier Properties of Poly(Ethylene Terephthalate) Modified with a Small Amount of Aromatic Comonomer, with A. Polyakova, D. M. Conner, D. M. Collard, D. A. Schiraldi, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **39**, 1900-1910 (2001).

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- 259 Miscibility of Ethylene-Styrene Copolymer Blends, with H. Y. Chen, Y. W. Cheung, and E. Baer, *Polymer*, **42**, 7819-7830 (2001).
- 258 Measurement of Water Vapor Transmission Rate in Highly Permeable Films, with Y. Hu, V. Topolkaev, and E. Baer, *J. Appl. Polym. Sci.*, **81**, 1624-1633 (2001).
- 257 Phase Behavior of Partially Miscible Ethylene-Styrene Copolymer Blends, with H. Y. Chen, S. P. Chum, and E. Baer, *Macromolecules*, **34**, 4033-4042 (2001).
- 256 Biodegradation of Polyether Polyurethane Inner Insulation in Bipolar Pacemaker Leads, with M. J. Wiggins, B. Wilkoff, and J. M. Anderson, *J. Biomed. Mater. Res. (Appl. Biomater.)*, **58**, 302-307 (2001).
- 255 Comparison of Semicrystalline Ethylene-Styrene and Ethylene-Octene Copolymers Based on Comonomer Content, with H. Y. Chen, S. P. Chum, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **39**, 1578-1593 (2001).
- 254 Self-Adhesion of Polyethylene in the Melt: 2. Comparison of Heterogeneous and Homogeneous Copolymers, with N. Z. Qureshi, M. Roganova, E. V. Stepanov, G. Capaccio, and E. Baer, *Macromolecules*, **34**, 3007-3017 (2001).
- 253 Self-Adhesion of Polyethylene in the Melt: 1. Heterogeneous Copolymers, with N. Z. Qureshi, E. V. Stepanov, G. Capaccio, and E. Baer, *Macromolecules*, **34**, 1358-1364 (2001).
- 252 Interrelationships between Electrical and Mechanical Properties of a Carbon Black-Filled Ethylene-Octene Elastomer, with L. Flandin and E. Baer, *Polymer*, **42**, 827-838 (2001).
- 251 Linear Stress Relaxation Behavior of Amorphous Ethylene-Styrene Interpolymers, with H. Y. Chen, E. V. Stepanov, S. P. Chum, and E. Baer, *Macromolecules*, **33**, 8870-8877 (2000).
- 250 Breathable Polymer Films Produced by the Microlayer Coextrusion Process, with C. Mueller, V. Topolkaev, D. Soerens, and E. Baer, *J. Appl. Polym. Sci.*, **78**, 816-828 (2000).
- 249 Oxygen Barrier Properties of Oriented and Heat Set Poly(ethylene terephthalate), with N. Qureshi, E. V. Stepanov, D. Schiraldi, and E. Baer, *J. Polym. Sci. B: Polym. Phys.*, **38**, 1679-1686 (2000).
- 248 Processing and Properties of Polymer Microlayered Systems, with E. Baer and J. Kerns, in Structure Development during Polymer Processing (A. M. da Cunha and S. Fakirov, eds.), NATO Science Series, Series E: Applied Sciences Vol. 370, Kluwer, 2000, pp.327-344.
- 247 Comparison of Irreversible Deformation and Yielding in Microlayers of PC with PMMA and SAN, with J. Kerns, A. Hsieh, and E. Baer, *J. Appl. Polym. Sci.*, **77**, 1545-1557 (2000).

- 246 Solid-State Structure and Properties of Hyperbranched Polyols, with M. Rogunova, T.-Y. S. Lynch, W. Pretzer, M. Kulzick, and E. Baer, *J. Appl. Polym. Sci.*, **77**, 1207-1217 (2000).
- 245 Correlation of Fatigue and Creep Slow Crack Growth in a Medium Density Polyethylene Pipe Material, with M. Parsons, E. V. Stepanov, and E. Baer, *J. Mater. Sci.*, **35**, 2659-2674 (2000).
- 244 Effect of Strain Rate on Stepwise Fatigue and Creep Slow Crack Growth in High Density Polyethylene, with M. Parsons, E. V. Stepanov, and E. Baer, *J. Mater. Sci.*, **35**, 1857-1866 (2000).
- 243 Effect of Strain on the Properties of an Ethylene-Octene Elastomer with Conductive Carbon Fillers, with L. Flandin, A. Chang, S. Nazarenko, and E. Baer, *J. Appl. Polym. Sci.*, **76**, 894-905 (2000).
- 242 Relationship of Coating Failure to Deformation in the Deep Drawn Cup, with A. Polyakova, E. V. Stepanov, T. Provder, and E. Baer, *J. Adhes.*, **72**, 37-50 (2000).
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PhD ADVISEES

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Christenson, Elizabeth M.

“Biostability and Biocompatibility of Modified Polyurethane Elastomers”, May, 2005

Hu, Jiong

“Structure-Property Relationships in Some Polymeric Composite Systems”, May, 2005

Liu, Richard Yufeng

“Oxygen Transport as a Structure Probe for Amorphous Polymeric Systems”, May, 2005

Bernal-Lara, Teresa Elizabeth

“Failure Processes in Some Polymers: A. Slow Crack Growth in Poly(vinylchloride) and B. Breakup of Poly(ethylene) Nanolayers”, January, 2005.

Stephens, Catherine Honor

“Miscibility, Structure-Property Relationships and Crystallization Kinetics of Ethylene Copolymers” June, 2004

Poon, Benjamin Chunman

“Effect of Microstructure on Physical Properties of Olefin Copolymers” January, 2004

Hu, Yu

“Prediction of Long-Term Properties in Polymeric Systems” August, 2003

Wiggins, Michael John

“Biostability of Polyurethane Elastomers: Pacemaker Leads, Effect of Fatigue, and Novel Antioxidant Stabilizers” May, 2002

Collier, Terry Odell III

“Chemical and Physical Effects on the Adhesion, maturation, and Survival of Monocytes, macrophages, and Foreign Body Giant Cells” May, 2002 (with Prof. J. M. Anderson)

Jarus, David Alan

“Polyolefin Blends with Immiscible Polymers: Weld Line Strength, Impact Properties, Microlayer Morphology, and Barrier” January 2002

Chang, Andy Cheng

“High Strain Deformation Behavior of Semicrystalline Polyolefins and Blends” May, 2002

Polyakova, Anna

“Effect of Formulation Variables on Polymer Properties: I. Deep Draw of the Epoxy Based Coatings; II. Oxygen Barrier of Poly(ethylene terephthalate)” January, 2001

Chen, Hongyu

**“Structure-Property Relationships of Ethylene-Styrene Interpolymers and Their Blends”
January, 2001**

Parsons, Mark Richard

“Slow Crack Growth in Fatigue and Creep of Polyethylene Pipe Resins; and Adhesion of Styrenic Triblock Copolymers” August, 1999

Schuman, Thomas Leo

“Interdiffusion and Solid State Structure of Polyethylene Microlayer Composites” May, 1999

Mueller, Chad David

“Processing and Post-Processing Issues Related to Polymer Films” August, 1998

Ebeling, Thomas Arnold

**“Delamination Strength of Polymers as Determined by Peeling of Microlayer Composites”
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**“Biomechanisms of Giant Cell Formation and Leukocyte Adhesion on Polyurethanes”
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”Microstructural Analysis of Polyethylenes and Their Blends and Copolymers”, May, 1995

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Lee, Ming-Peng

“Phase Morphology and its Relationship to Fracture of Injection Molded Polycarbonate and ABS Blends” May, 1991

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Weng, Tung-Yao

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Kim, Yong-Won

“Structure-Property Relationships of some Polymer Blends” May, 1989

Tang, Hsiang-In

“Mechanical Properties and Deformation Mechanisms of Polypropylene Materials” January, 1988

Ma, Muyuan

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“Toughening Mechanisms in Miscible and Immiscible Blends” May, 1985

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“The Relationship between Arterial Thrombosis and Neutralization of a Polyethylene Ionomer” August, 1985 (with Prof. R. D. Jones)

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“Deformation Mechanisms in Polystyrene Materials” August, 1985

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“Chemical Modification of Polyethylene” January, 1980

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”Improving Barrier and Transparency of PET-MXD6 Blends, January, 2005

Ronesi, Vickey Marie

“Adhesion of Ethylene-Styrene Copolymers to Polyethylene in Microlayers” January, 2003

Qureshi, Nadim Zulfiqar Ali

“Diffusional Processes as Related to Melt Adhesion and Oxygen Barrier” May, 2000.

Kerns, Julia Anne

**“Effect of Adhesion on Comparison of Irreversible Deformation and Yielding in
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Sekelik, Douglas John

“Oxygen Barrier Property Enhancement of Poly(ethylene terephthalate)” August, 1998

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“Fatigue Crack Propagation in Polyethylene Pipe Resin” May, 1997

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- Bensason, Selim**
- “The Damage Zone in the Blends of Poly(vinyl chloride) with Methyl Methacrylate-Butadiene-Styrene (MBS)” May, 1993**
- Pollock, George L. III**
- “Interdiffusion in Microlayered Polymer Composites of Polycarbonate and a Copolyester” May, 1993**
- Renier, Mike**
- “Identification of the Extractable Components from Poly(etherurethane urea) Elastomers” August, 1992**
- Knouff, Brian Joseph**
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- “Acoustic Emission from Carbon Fiber-Epoxy Composites” January, 1989**
- Li, Tao**
- “Impact Modification of Short Glass fiber Reinforced Poly(vinyl chloride)” August, 1989**
- Faudree, Michael Christopher**
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- Zhao, Quinghong**
- “Long Term In Vitro Enzymic Biodegradation Studies of Polyetherurethane Elastomers for Cardiovascular Applications” January, 1987**
- Gregory, Brian**
- “Deformation Mechanisms of PC/SAN Microlayer Composites” January, 1986**
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